

Unit Planning Guide: Grade 7 Unit 2 of 7

Unit Title: Numerical and Algebraic Expressions	Pacing (Duration of Unit):5 weeks
Grade:7	Buffer Day(s):4

Desired Results

Transfer Goals

Students will be able to independently use their learning to:

- 1. Make sense of problems and persevere in solving them.**
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- 4. Model with mathematics.**
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- 8. Look for and express regularity in repeated reasoning.**

Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

Standards (Priority Standards in bold):	WIDA for English Language Learners
<p>7.EE.1: Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>7.EE.2: Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.</p> <p>7.EE.3: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.</p> <p>MA.4.c. Extend analysis of patterns to include analyzing, extending, and determining an expression for simple arithmetic and geometric sequences (e.g., compounding, increasing area), using tables, graphs, words, and expressions.</p>	<p>Standard 1: ELLs communicate for Social and Instructional purposes within the school setting</p> <p>Standard 3: ELLs communicate information, ideas and concepts necessary for academic success in the content area of Mathematics</p> <p>In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) this curriculum map, 2.) a list of their ELLs and their proficiency levels, and 3.) appropriate language function expectations and scaffolds or supports.</p>

Meaning (*Mostly assessed through Performance Tasks/Assessments)
--

<p>Big Ideas: (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)</p> <ul style="list-style-type: none"> • Numerical or algebraic expressions can be used to represent real life word problems • Properties of operations can be used to simplify and evaluate expressions with rational coefficients. • Algebraic expressions can represent arithmetic and geometric sequences 	<p>Essential Questions: (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)</p> <ul style="list-style-type: none"> • How can you use variables and algebraic expressions to represent real-life situations?
--	--

Acquisition (*Mostly assessed through traditional summative assessments)

Knowledge: Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.

Students will know ...

- Key mathematical words in order to generate algebraic expressions.
- That algebraic expressions can be rewritten in different forms by applying the properties of operations
- What it mean to simplify an expression
- Order of operations is essential to evaluating expressions

Key Academic Vocabulary

- **Expressions**
- **Coefficient**
- **Term**
- **Like terms**
- **Simplify**
- **Variable**
- **Constant**

Skills: The discrete skills and process students should be able to use independently (Bloom's Level of Learning should be noted in parentheses.)

Students will be skilled at:

- Writing numerical and algebraic expressions from verbal representations
- Rewriting expressions in different forms
- Expanding linear expressions
- Applying properties of operations to add, subtract, factor and expand expressions with rational coefficients
- Simplifying numerical and algebraic expressions
- Combining like terms
- Evaluating expressions
- Extending patterns to determine terms in sequences
- Solving real-world problems with rational numbers in different forms.

